

Abstract

RE superconductive layer excelling in J_c and T_c is formed on an interlayer capable of preventing cracking and diffusion of substrate-constituting Ni element into YBCO layer and excelling in crystallinity and surface smoothness. The interlayer is formed by coating a surface of metal substrate with a mixed solution composed of an organometallic acid salt of cerium, an organometallic acid salt of a solid solution formation element capable of forming a solid solution with cerium and an organometallic acid salt of a charge compensation element capable of compensating for a charge mismatch attributed to a difference between the electron valences of respective ions of cerium and the solid solution formation element and subsequently carrying out heat treatment in a reducing atmosphere of 900 to 1200°C whose pressure ranges from 0.1 Pa to below atmospheric pressure. Thereafter, a rare earth oxide superconductive layer is formed on the interlayer.